

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

At the outset, Applicants note with appreciation the courtesy of a personal interview extended by Examiner Shawntina Fuqua to Applicants' representative, Chien Yuan. The personal interview was conducted on October 5, 2004.

Claims 1-18 are pending. Claims 1 and 2 are amended, and new claims 13-18 are added, by the present amendment. Applicants respectfully submit that support for amended claims 1 and 2 and for new claims 13-18 is self-evident from the specification as originally filed, including the original claims and drawings. Thus, no new subject matter is introduced by the foregoing amendment.

The Office Action rejected claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Mizuno et al. (U.S. Patent No. 5,766,363; hereinafter "Mizuno"), in view of Nishio (JP 03-244928).

At the personal interview, Examiner Fuqua agreed that the foregoing amendment to claim 1 appears to overcome the art of record. For example, amended claim 1 is drawn to a ceramic heat that includes, among other features:

...a ceramic substrate having a first surface and a second surface, the first surface being arranged as a heating face configured to heat the semiconductor wafer;

a resistance heating element formed on the second surface of said ceramic substrate or inside said ceramic substrate, and including at least two circuits;

...and an operation unit configured to calculate, based on said temperature data, electric power data required for said resistance heating element to attain a uniform temperature of the heating face, wherein different electric power is supplied to each of the at least two circuits based on the calculated electric power data.

Referring to the non-limiting example shown in Applicants' Figure 1(a), a ceramic heater 10 includes a heater plate 11, a surface 11a that is arranged as a heating face, a

second surface (positioned on a different side of the heater plate 11), and two heating elements 12x and 12y formed in the heater plate 11. The heating elements 12x and 12y receive different levels of electric power such that the surface 11a attains a uniform temperature.<sup>1</sup>

As discussed in the interview, the suggested combination of Mizuno and JP '928 does not disclose or suggest amended claim 1. For example, Mizuno depicts a substrate holder 113 that supports and heats a substrate 114.<sup>2</sup> The substrate holder 113 does not include a heating element on a surface of the substrate holder 113 or within the substrate holder 113. Instead, the substrate holder 113 itself is heating by a separate ceramic heater 31 that includes a carbon coating 34 on an exterior surface of the ceramic heater 31.<sup>3</sup>

As such, Mizuno does not disclose or suggest a ceramic substrate having a first surface and a second surface, the first surface being arranged as a heating face configured to heat the semiconductor wafer, and a resistance heating element being formed on the second surface of the ceramic substrate or inside the ceramic substrate, as recited in amended claim 1.

Further, as acknowledged in the Office Action, Mizuno fails to disclose an operation unit as claimed in amended claim 1. Specifically, Mizuno fails to disclose an operation unit configured to calculate, based on said temperature data, electric power data required for a resistance heating element to attain a uniform temperature of a heating face.

To remedy the deficiencies of Mizuno with respect to claim 1, the Office Action turns to Nishio. However, Nishio also fails to disclose (1) a ceramic substrate having a first surface arranged as a heating face and having a resistance heating element, and (2) an operation unit

---

<sup>1</sup> See Applicants' specification at page 7, lines 2-6.

<sup>2</sup> See Mizuno at Figure 1 and at col. 6, lines 18-22.

<sup>3</sup> See *id.* at col. 6, lines 22-27 and 38-41.

configured to calculate electric power data associated with attaining a uniform temperature of a heating face. As such, Nishio fails to remedy the deficiencies of Mizuno with respect to amended claim 1.

Accordingly, for at least the above reasons, Applicants respectfully submit that amended claim 1 patentably defines over Mizuno and Nishio. Further, as claims 3, 4, 7-9, and 13 depend from amended claim 1, these claims are also patentable over Mizuno and Nishio. Moreover, amended independent claim 2 recites, among other features, features that are substantially similar to those of amended claim 1 discussed above. Accordingly, Applicants respectfully submit, for at least the reasons discussed above, that amended claim 2 and claims depending from amended claim 2 also patentably define over Mizuno and Nishio.

New independent claim 15 is drawn to a method including, among other features:

- ...positioning the semiconductor wafer above a ceramic substrate, the ceramic substrate having a first surface and a second surface, and the first surface being arranged as a heating face configured to heat the semiconductor wafer;
- heating the heating face with at least two heating circuits formed on the second surface of the ceramic substrate or inside the ceramic substrate;
- ...calculating, based on the temperature data, electric power data associated with attaining a uniform temperature of the heating face; and
- supplying different electric power to each of the at least two heating circuits based on the electric power data.

For at least the reasons discussed above with respect to amended claim 1, Mizuno and Nishio do not teach or suggest such new claim 15. As such, Applicants respectfully submit that new claims 15-18 are patentable over Mizuno and Nishio.

Application No. 10/049,293  
Reply to Office Action of June 3, 2004

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Masayasu Mori  
Attorney of Record  
Registration No. 47,301

Customer Number

**22850**

Tel: (703) 413-3000

Fax: (703) 413 -2220

(OSMMN 06/04)

MM/CHY:pch

I:\ATTY\CHY\219288US\219288 AM AF 11 OCT04.DOC

Chien H. Yuan

Registration No. 48,056